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(71) **PATENT-TREUHAND-GESELLSCHAFT FÜR ELEKTRISCHE GLÜHLAMPEN MBH,**
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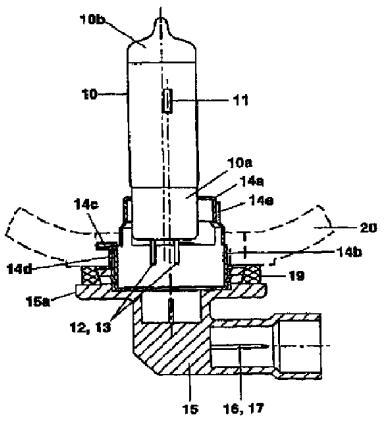
(54) LAMPE ELECTRIQUE POUR UN PHARE DE VEHICULE
(54) ELECTRIC LAMP FOR A VEHICLE HEADLIGHT

(57)

The invention relates to lamp for a headlight of a vehicle comprising a metal- plastic socket. The lamp socket comprises a metallic holder (14a-14e) for the lamp bulb (10) and a plastic socket part (15) which is provided with the electrical contacts (16, 17) of the lamp. The metallic holder (14a-14e) is anchored in said plastic socket part (15). A sealing ring (19) formed of silicone or rubber is used for sealing the reflector opening which is configured as the lamp socket. The sealing ring (19) is arranged between the outer wall of the reflector (20) and the ring-shaped flange (15a) of the plastic socket part (15). According to the invention, the upper surface of the ring-shaped flange facing the lamp bulb (10) is provided with a light- reflecting coating.



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(12) (19) (CA) **Demande-Application**

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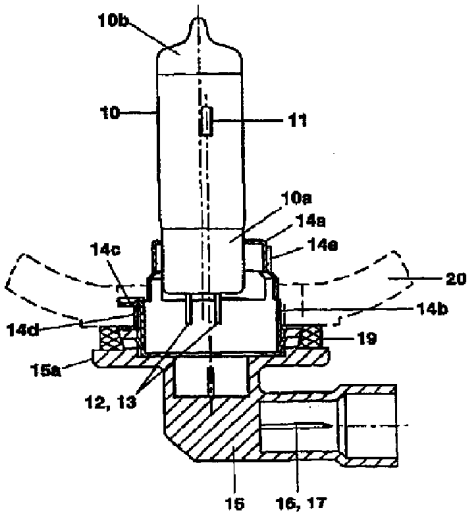
(54) LAMPE ELECTRIQUE POUR UN PROJECTEUR DE VEHICULE

(54) ELECTRICAL LAMP FOR A HEADLIGHT OF A VEHICLE



(57) L'invention concerne une lampe pour un projecteur de véhicule, équipée d'un culot en métal et en plastique. Ce culot présente une fixation métallique (14a-14c) l'ampoule (10) de la lampe, et une partie de culot en plastique (15) comportant les raccordements électriques (16, 17) de la lampe, la fixation métallique (14a-14e) étant ancrée dans ladite partie de culot. Une bague d'étanchéité (19) en silicone ou en caoutchouc, placée entre la paroi extérieure de réflecteur (20) et la bordure annulaire (15a) de la partie de culot en plastique (15) sert à assurer l'étanchéité de l'ouverture de réflecteur se présentant sous la forme d'une douille de lampe. Selon l'invention, le côté supérieur orienté vers l'ampoule (10), de la bordure annulaire (15a), présente un revêtement réfléchissant la lumière.

(57) The invention relates to lamp for a headlight of a vehicle comprising a metal-plastic socket. The lamp socket comprises a metallic holder (14a-14c) for the lamp bulb (10) and a plastic socket part (15) which is provided with the electrical contacts (16, 17) of the lamp. The metallic holder (14a-14e) is anchored in said plastic socket part (15). A sealing ring (19) formed of silicone or rubber is used for sealing the reflector opening which is configured as the lamp socket. The sealing ring (19) is arranged between the outer wall of the reflector (20) and the ring-shaped flange (15a) of the plastic socket part (15). According to the invention, the upper surface of the ring-shaped flange facing the lamp bulb (10) is provided with a light-reflecting coating.

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(54) Title: ELECTRICAL LAMP FOR A HEADLIGHT OF A VEHICLE

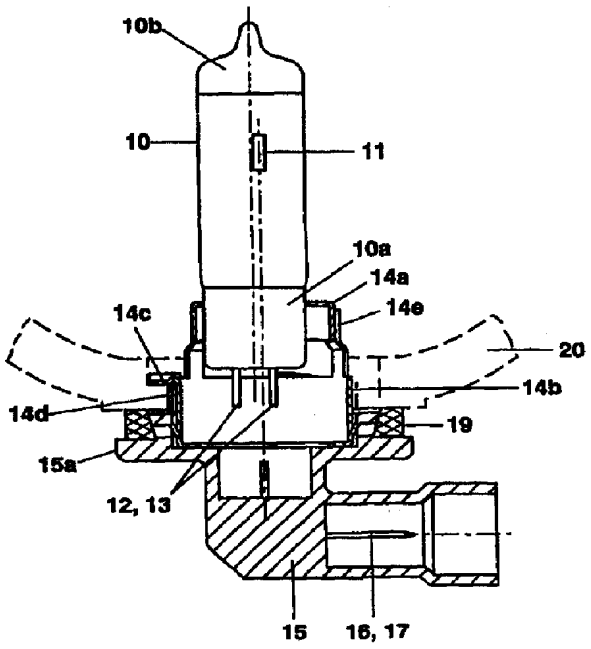
(54) Bezeichnung: ELEKTRISCHE LAMPE FÜR EINEN FAHRZEUGSCHEINWERFER

(57) Abstract

The invention relates to lamp for a headlight of a vehicle comprising a metal–plastic socket. The lamp socket comprises a metallic holder (14a–14e) for the lamp bulb (10) and a plastic socket part (15) which is provided with the electrical contacts (16, 17) of the lamp. The metallic holder (14a–14e) is anchored in said plastic socket part (15). A sealing ring (19) formed of silicone or rubber is used for sealing the reflector opening which is configured as the lamp socket. The sealing ring (19) is arranged between the outer wall of the reflector (20) and the ring–shaped flange (15a) of the plastic socket part (15). According to the invention, the upper surface of the ring–shaped flange facing the lamp bulb (10) is provided with a light–reflecting coating.

(57) Zusammenfassung

Die Erfindung betrifft eine mit einem Metall–Kunststoffsockel ausgestattete Fahrzeugschweinwerferlampe. Der Lampensockel besitzt eine metallische Halterung (14a–14e) für den Lampenkolben (10) und ein mit den elektrischen Anschlüssen (16, 17) der Lampe versehenes Kunststoffsockelteil (15), in dem die metallische Halterung (14a–14e) verankert ist. Zur Abdichtung der als Lampenfassung ausgebildeten Reflektoröffnung dient ein Dichtungsring (19) aus Silikon oder Gummi, der zwischen der Reflektoraußenwand (20) und dem ringförmigen Flansch (15a) des Kunststoffsockelteils (15) angeordnet ist. Erfindungsgemäß ist die dem Lampenkolben (10) zugewandte Oberseite des ringförmigen Flansches (15a) mit einer lichtreflektierenden Beschichtung versehen.



Electric lamp for a vehicle headlight

The invention relates to an electric lamp for a vehicle headlight in accordance with the preamble of Patent Claim 1.

I. Prior Art

Such an electric lamp is disclosed, for example, in the International Patent Application WO 97/25733. This laid-open patent application describes an electric incandescent lamp, in particular a motor vehicle headlight, having an incandescent filament enclosed in a vitreous lamp bulb, and a lamp cap comprising metal parts and plastic parts. The pinch foot, sealed in a gastight fashion, of the lamp bulb is fixed in a metallic holder part which, for its part, is connected directly or via an intermediate ring to a metallic, annular support sleeve. The metallic support sleeve is anchored in the plastic cap part of the lamp cap, which is fitted with the electric terminals of the lamp. In order to mount the lamp in the opening, constructed as lamp mount, of a reflector, the annular support sleeve has three reference noses, which are arranged in one plane are distributed equidistantly over the circumference of the support sleeve, and engage in the lamp mounting opening of the reflector, and a press-on spring which acts radially outwards and bears resiliently against the edge of the lamp mounting opening of the reflector. The sealing of the mounting opening of the reflector is performed by means of a silicone ring or rubber ring which is arranged between the reflector outer wall and the annular flange of the plastic cap part. The disadvantage of this lamp consists in that the plastic surface of the flange is accessible for the electromagnetic radiation emitted by

the incandescent filament through the mounting opening of the reflector. This plastic surface is heated by the infrared radiation emitted by the incandescent filament and, in addition, by the absorption of the light produced by the incandescent filament, and tends to vaporize. Moreover, the aforementioned light absorption reduces the efficiency of the headlight.

II. Summary of the Invention

It is the object of the invention to provide a vehicle headlight lamp which when used in a headlight ensures a reduced vaporization behaviour and an improved efficiency.

The object is achieved according to the invention by means of the characterizing features of Patent Claim 1. Particularly advantageous designs of the invention are described in the subclaims.

The vehicle headlight lamp according to the invention has a lamp cap, a transparent lamp bulb and at least one luminous means surrounded by the lamp bulb, the lamp cap having a plastic cap part, provided with the electric terminals of the lamp, and at least one metallic holder part, anchored in the plastic cap part, for the lamp bulb. According to the invention, the surfaces of the plastic cap part which face the lamp bulb are provided with an optically reflecting coating. The optically reflecting coating reduces the light absorption of the plastic cap part, and thereby reduces the thermal loading of the latter and consequently improves the vaporization behaviour of the plastic cap part. In addition, the optically reflecting coating increases the efficiency of the headlight, since the light impinging on the plastic surfaces is now rendered useful for the headlight reflector by the optically reflecting coating thereof.

The optically reflecting coating is advantageously designed as an aluminium layer, because the latter has a degree of optical reflection as high as the headlight reflector, and adheres satisfactorily to the plastic cap part. For reasons of production engineering, the aluminium layer is advantageously designed as an aluminium-containing paint layer. Alternatively, the aluminium layer can advantageously also consist of an aluminium sheet which covers the plastic surfaces of the lamp cap which face the lamp bulb, and whose side facing the lamp bulb is polished.

III. Description of the preferred embodiment

The invention is explained in more detail below with the aid of a preferred exemplary embodiment. In the drawing:

Figure 1 shows a diagrammatic, partially sectioned illustration of the preferred exemplary embodiment of the lamp according to the invention, and

Figure 2 shows a top view of the plastic cap part, and the support sleeve of the lamp illustrated in Figure 1.

The preferred exemplary embodiment of the invention is a single-filament halogen lamp which is provided for use in a motor vehicle headlight. This lamp has a vitreous, essentially cylindrical lamp bulb 10 with a pinch foot 10a sealed in a gastight fashion. The dome 10b of the lamp bulb 10 is provided with an optically absorbing coating. Serving as light source is an incandescent filament 11, which is aligned parallel to the lamp bulb axis and is connected in an electrically conducting fashion to two supply leads 12,13 which are guided out of the pinch foot 10a and consist of molybdenum wire. The pinch foot 10a of the lamp bulb 10

is fixed in a metallic holder, which comprises the cup-shaped holder part 14a, the intermediate ring 14e and the annular support sleeve 14b. In addition to the metallic holder 14a, 14b, the lamp cap also has a plastic cap part 15, which is provided with electric terminals 16, 17 of the lamp and in which the annular metallic support sleeve 14d is anchored. The support sleeve 14b has three reference noses 14c, lying in a plane and a press-on spring 14d for mounting the lamp in the reflector 20 of a motor vehicle headlight. The sealing of the reflector 20 is performed by means of a silicone sealing ring 19 which bears against the outer wall 20b of the reflector 20 and against the annular flange 15a of the plastic cap part 15. The design of the lamp in accordance with the preferred exemplary embodiment, and its use in a headlight are illustrated diagrammatically in Figure 1. The top side of the annular flange 15a, which faces the lamp bulb 10, is printed with an optically reflecting, aluminium-containing, paint layer 21 (Figure 2) which essentially has the same degree of optical reflection and the same hue as the reflector 20.

The invention is not restricted to the exemplary embodiment explained in more detail above. For example, instead of the application of a paint layer, it is also possible to carry out vapour deposition of an aluminium layer on the topside of the annular flange 15a. A further alternative to the paint layer is to cover the topside of the annular flange 15a with an aluminium sheet whose surface facing the lamp bulb is polished. Instead of an aluminium layer, it is also possible for the topside of the annular flange 15a to be provided with a different metallic coating, if the latter has a similarly high degree of reflection as the reflective surface of the headlight reflector. For example, the reflecting coating 21 can also comprise a steel sheet which covers the topside of the annular flange 15a which faces the lamp bulb.

Patent Claims

1. Electric lamp for a vehicle headlight, having a lamp cap, a transparent lamp bulb (10) and at least one luminous means (11) surrounded by the lamp bulb (10), the lamp cap having a plastic cap part (15), provided with the electric terminals (16,17) of the lamp, and at least one metallic holder part (14a-14e), anchored in the plastic cap part (15), for the lamp bulb (10), characterized in that the surfaces (15a) of the plastic cap part (15) which face the lamp bulb (10) are provided with an optically reflecting coating (21).

2. Electric lamp according to Claim 1, characterized in that the optically reflecting coating (21) is an aluminium layer.

3. Electric lamp according to Claim 2, characterized in that the optically reflecting coating (21) is an aluminium-containing paint layer.

4. Electric lamp according to Claim 2, characterized in that the optically reflecting coating (21) is an aluminium sheet which covers the plastic surfaces (15a) which face the lamp bulb, and whose side facing the lamp bulb is polished.

5. Electric lamp according to Claim 1, characterized in that the optically reflecting coating (21) comprises a steel sheet which covers the plastic surfaces (15a) facing the lamp bulb.

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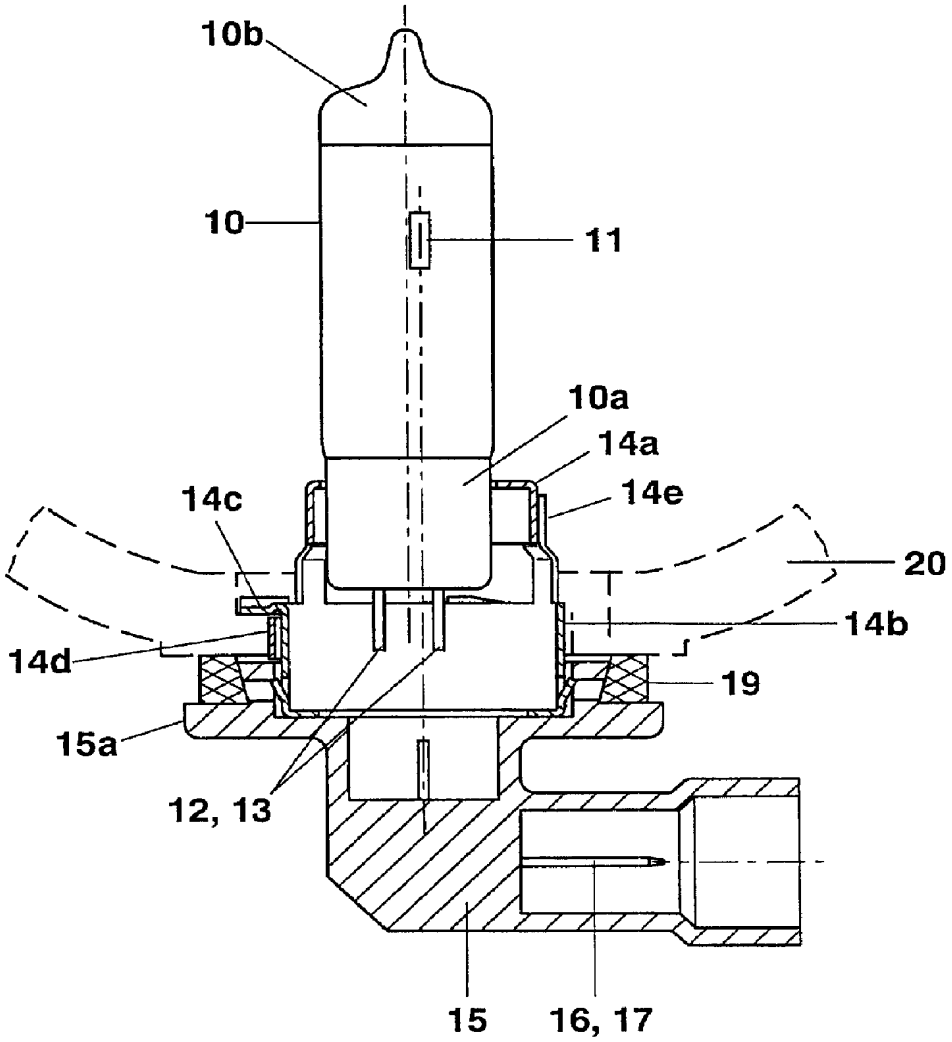

FIG. 1

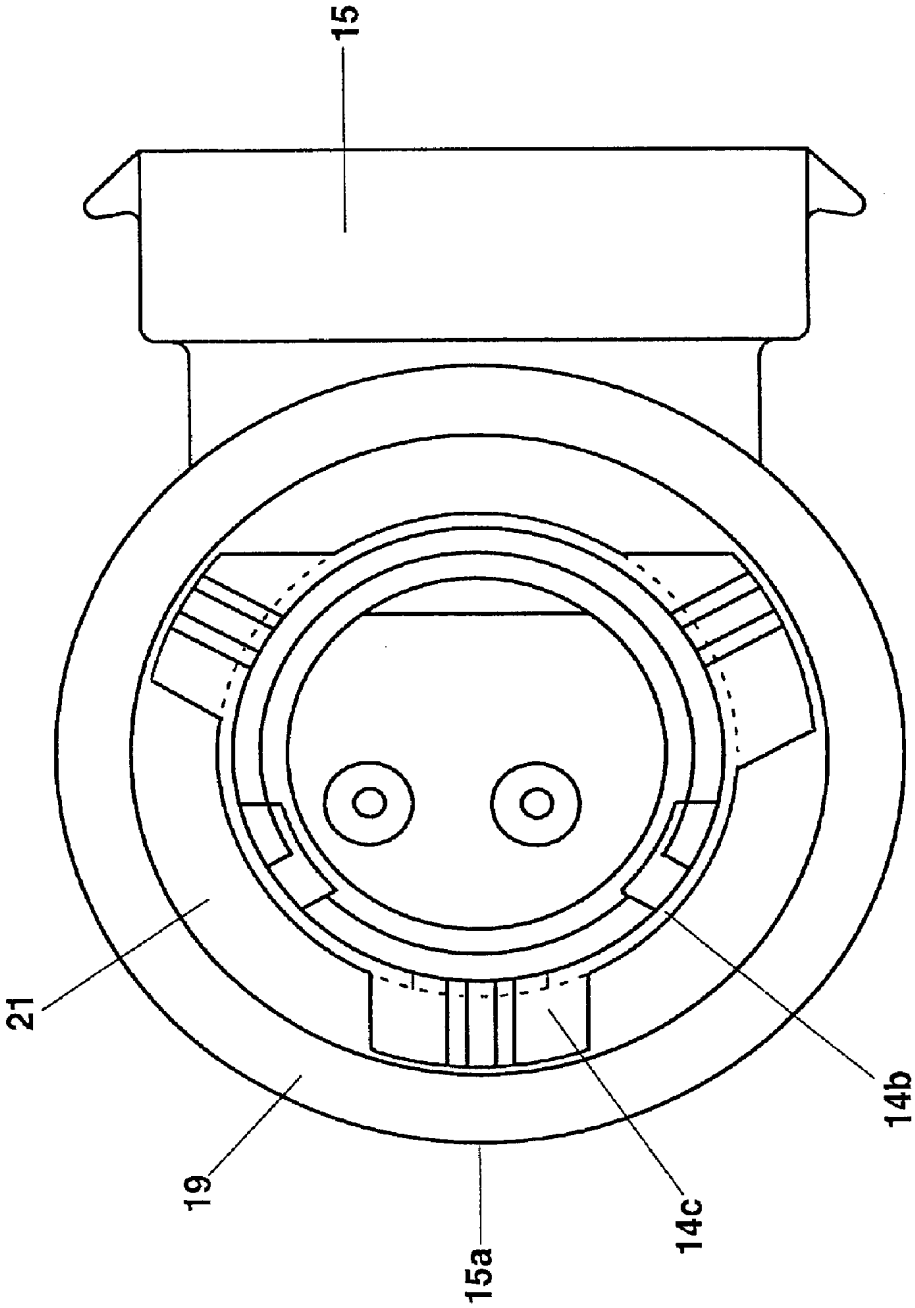

FIG. 2